

**Erler &
Kalinowski, Inc.**

Consulting Engineers and Scientists

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30 July 1999

RECEIVED
JUL 23 1999
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

Ms. Ana Townsend
Site Cleanup Unit
California Regional Water Quality Control Board
Los Angeles Region
320 4th Street, Suite 200
Los Angeles, CA 90013

AA
744

Subject: Quarterly Progress Report for April to June 1999
For the Jervis B. Webb Company Property at
5030 Firestone Boulevard, South Gate, California
(RWQCB SLIC File No. 744; EKI 961025.04)

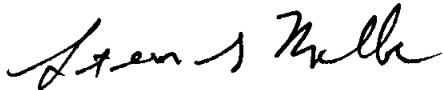
Dear Ms. Townsend:

On behalf of Jervis B. Webb Company of California ("Webb"), Erler & Kalinowski, Inc. is pleased to submit the enclosed *Quarterly Progress Report for April to June 1999*, dated 30 July 1999. This report describes the activities completed at the Webb property located at 5030 Firestone Boulevard in South Gate during the period from April through June 1999.

Please contact us if you have any comments or questions.

Very truly yours,

ERLER & KALINOWSKI, INC.



Steven G. Miller, P.E. (CE, Cert. 43419)
Project Manager

cc: Mr. Eli Stanesa, Jervis B. Webb Company

Quarterly Progress Report for April to June 1999

Jervis B. Webb Company Property
5030 Firestone Boulevard
South Gate, California

30 July 1999

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Kalinowski, Inc.**

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Jervis B. Webb Company Property
5030 Firestone Boulevard, South Gate, California
Quarterly Progress Report for April to June 1999

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Jervis B. Webb Company Property
5030 Firestone Boulevard, South Gate, California
Quarterly Progress Report for April to June 1999

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1. INTRODUCTION

Erler & Kalinowski, Inc. ("EKI") has prepared this *Quarterly Progress Report for April to June 1999* for the property located at 5030 Firestone Boulevard and 9301 Rayo Avenue in South Gate, California Avenue (collectively referred to as the "Site," see Figure 1). The principal objectives of the activities performed during this quarter were to 1) obtain additional data on the elevations and chemical concentrations for groundwater in monitoring wells at the Site, 2) remove the clarifier at the Site, and 3) continue activities related to installation of a soil vapor extraction system at the Site. The work documented in this report was performed on behalf of the Jervis B. Webb Company ("Webb"). The property at 5030 Firestone Boulevard is owned by Webb ("Webb property") and the adjacent property at 9301 Rayo Avenue is owned by Reliable Steel Building Products, Inc. ("Reliable Steel").

The groundwater investigation and quarterly monitoring activities described herein were performed in accordance with EKI's *Project Tasks, Schedule, and Work Plan for Additional Groundwater Investigation and Quarterly Groundwater Monitoring at the Jervis B. Webb Company Property* ("Sampling Plan"), dated 29 September 1998.

EKI has performed the following activities in order to investigate areas of environmental concern at the Site since October 1997:

- Installation of soil borings and collection of soil samples;
- Installation of five groundwater monitoring wells (MW-1 – MW-5);
- Collection of groundwater elevation data from the on-site groundwater monitoring wells;
- Collection and analysis of groundwater samples from the existing five groundwater monitoring wells and from former monitoring wells DIAL MW-4 and DIAL MW-5;
- Collection of soil data using cone penetrometer testing;
- Collection and analysis of groundwater samples utilizing using Hydropunch sampling; and
- Collection and analysis of soil gas samples.

The results of EKI's previous investigations were reported in the following documents:

- *Phase II Soil Investigation Report*, 18 February 1998;
- *Phase II Groundwater Investigation Report*, 30 June 1998;
- *Additional Groundwater Investigation and Quarterly Monitoring Report for October to December 1998*, 13 January 1999; and
- *Quarterly Progress Report for January to March 1999*, 4 June 1999.

Chemical analyses of the soil collected at the Site detected two volatile organic compounds ("VOCs"): trichloroethene ("TCE") and tetrachloroethene ("PCE"). Additional VOCs were detected in groundwater and soil gas samples collected at the site; however, the concentrations of TCE and PCE detected were generally higher than the concentrations for other VOCs.

2. QUARTERLY GROUNDWATER MONITORING

EKI submitted a schedule for groundwater monitoring and sampling to the California Regional Water Quality Control Board, Los Angeles Region ("RWQCB") in a letter dated 28 June 1999. This schedule was prepared in response to the request set forth in the RWQCB letter to Webb dated 18 May 1999. The proposed groundwater monitoring activities are described in EKI's *Project Tasks, Schedule, and Work Plan for Additional Groundwater Investigation And Quarterly Groundwater Monitoring at the Jervis B. Webb Company Property at 5030 Firestone Boulevard, South Gate, California*, dated 29 September 1998.

2.1. Measurements of Groundwater Elevation

The depth to groundwater in monitoring wells MW-1 through MW-5 was measured on 1 June 1999 (see Figure 2 for well locations). These data are provided in Table 1. The depth to the groundwater at the Site is approximately 43 ft bgs. Contours representing the elevation of the groundwater table on 1 June 1999 are shown on Figure 3. As inferred from the contours of groundwater elevation shown on Figure 3, the primary direction of groundwater flow in the groundwater table aquifer beneath the Site appears to be toward the south.

2.2. Groundwater Sampling

2.2.1. Groundwater Sampling Procedures

Prior to sampling of groundwater, each well was purged of a minimum of three well-casing volumes of groundwater using a submersible, electric pump. Groundwater purging was performed by West Hazmat and groundwater samples were collected by EKI. All down-hole equipment was thoroughly steam cleaned before use at each well.

During purging of groundwater on 1 June 1999, groundwater quality parameters were recorded by EKI (temperature, pH, conductivity, and turbidity). Water quality monitoring equipment was calibrated prior to commencement of groundwater purging. For each purge sample, the time, water quality parameters, and volume of purged groundwater were recorded on field purge forms (see Appendix A). Purging at each well was continued until parameters stabilized to within approximately 10%. Groundwater quality parameters were generally stable after purging three casing volumes of water from each well. Final turbidity was generally low, between 0.7 and 4.7 nephelometric turbidity units (see Appendix A).

Groundwater samples were collected by EKI using disposable polyethylene bailers. A new bailer was used to sample each well. A sample label that included a unique sample identification number, the time, and the date when the sample was collected was attached to each sample container. Sample containers were sealed in zip-lock plastic bags and placed in a cooler with ice for temporary storage and transport to the laboratory. Chain-of-Custody forms were initiated in the field and included with the samples. Laboratory reports and Chain-of-Custody forms for groundwater samples are attached in Appendix B.

2.2.2. Analytical Results for Groundwater Samples

Samples of groundwater were collected from monitoring wells MW-1 through MW-5 on 1 June 1999. In addition, a duplicate sample of groundwater was collected from well MW-5 on 1 June 1999. All samples of groundwater were submitted to Orange Coast for volatile organic compound ("VOC") analyses using EPA Method 8260. The analytical results for groundwater samples collected during this monitoring event are summarized in Table 2.

TCE, PCE, cis- and trans- 1,2-dichloroethene ("c-1,2-DCE" and t-1,2-DCE"), 1,1-dichloroethene ("1,1-DCE"), 1,1-dichloroethane ("1,1-DCA"), and 1,2-dichloroethane ("1,2-DCA") were detected in the samples of groundwater collected from groundwater monitoring wells MW-1 through MW-5 on 1 June 1999. The analytical results for the samples of groundwater collected during this monitoring event were similar to the results of previous groundwater monitoring at the Site, with the following exception:

- 1,2-DCA was detected in the samples of groundwater collected from MW-3, MW-4, and MW-5. 1,2-DCA was also detected in the duplicate sample of groundwater collected from well MW-5. 1,2-DCA had only been previously detected in one sample from one well (MW-4) at a concentration of 2.1 ug/l. 1,2-DCA has previously been detected in Hydropunch groundwater samples collected at the Site.

As mentioned in the *Phase II Groundwater Investigation Report* by EKI, dated 30 June 1998, benzene and xylenes were detected in the samples of groundwater collected from the former off-site wells DIAL MW-4 and DIAL MW-5 (Dial Corporation). These chemicals have not been detected in any of the samples of groundwater collected from the monitoring wells at the Site.

2.2.3. Quality Assurance/Quality Control for Groundwater Chemical Analyses

Standard laboratory QA/QC procedures used for the project included analysis of matrix spikes, matrix spike duplicates, a quality control check spike sample, and a method blank. The percent recoveries of matrix spikes, matrix spike duplicates, and the quality control check spike sample were within acceptable ranges. No analytes were detected in the method blank samples analyzed for this project. QA/QC results are provided with the laboratory reports in Appendix B.

EKI also collected a duplicate groundwater sample from well MW-5. The two samples collected from MW-5 had the same four analytes present above detection limits. The relative percentage differences ("RPDs") for these analytes ranged from 2.4 to 10.8. These RPDs indicate that an acceptable sampling and analytical reproducibility exists.

3. SOIL REMEDIATION

During the first quarter of 1999, EKI submitted a *Work Plan for Clarifier Removal Soil and Soil Remediation by Soil Vapor Extraction*, dated 14 April 1999, to the California Regional Water Quality Control Board ("RWQCB"). The RWQCB approved the *Work Plan*, with two modifications, in a letter dated 18 May 1999.

3.1. Clarifier Removal

Upon approval from the RWQCB, Cornerstone Environmental Contractors, Inc. ("Cornerstone") removed the clarifier from the Site between 1 June and 3 June 1999 (see Figure 4). Cornerstone excavated an area approximately 15 feet by 11 feet by approximately 8 ft deep in order to remove the clarifier and associated piping. On 3 June 1999, Mr. Rick Rodriguez of the City of South Gate Building and Safety Department visited the Site and verified that Cornerstone had properly capped the sewer inlet pipe into the clarifier following the excavation. After Mr. Rodriguez's approval, Cornerstone filled the excavated area with 47 cubic yards of non-native sand.

EKI collected soil samples from the excavated waste stockpiles for waste characterization. Waste disposal activities were not completed during the second quarter of 1999, and will therefore be discussed in the next Quarterly Progress Report.

3.2. Vapor Well Installation

On 23 and 24 June 1999, West HazMat Drilling Corporation ("West HazMat") installed eight vapor wells at the Site, as described in EKI's *Work Plan* (see Figure 4). West Hazmat installed two vapor extraction wells (SVE-1 and SVE-D1), two vapor monitoring wells (SVE-2 and SVE-3), and four vapor monitoring probes (VMP-1, VMP-2, VMP-D1, and VMP-D2) at the Site. All of the monitoring wells and probes were designed and constructed such that they can be converted for use as vapor extraction wells, if needed. All of the wells were constructed using Schedule 40 PVC casing and screen. Boring logs and well construction logs for the vapor wells will be included in the next quarterly monitoring report.

Vapor Extraction Wells: Vapor extraction well SVE-1 is a two-inch diameter well installed to a depth of approximately 25 feet below ground surface ("bgs") with slotted screen from approximately 19 to 25 feet bgs. Vapor extraction well SVE-D1 is a four-inch diameter well installed to a depth of approximately 44 feet bgs with slotted screen from approximately 30 to 40 feet bgs.

Vapor Monitoring Probes: Vapor monitoring probes VMP-1 and VMP-2 are two-inch diameter probes installed to a depth of approximately 25 feet bgs with slotted screen between from approximately 19 to 25 feet bgs.

Nested Vapor Monitoring Probes and Wells: Vapor monitoring probes VMP-D1 and VMP-D2 are constructed in the same borehole with vapor monitoring wells SVE-2 and SVE-3, respectively. Each of the probes and wells is constructed with 2-inch diameter PVC. VMP-D1 is installed to a depth of approximately 43 feet bgs with slotted screen from approximately 30 to 40 feet bgs. VMP-D2 is installed to a depth of approximately 44 feet bgs with slotted screen from approximately 31 to 41 feet bgs. SVE-2 is installed to a depth of approximately 24 feet bgs with slotted screen from approximately 18 to 24 feet bgs. SVE-3 is installed to a depth of approximately 25 feet bgs with slotted screen from approximately 19 to 25 feet bgs.

The soil borings for the wells and probes were completed by West Hazmat using a hollow-stem auger. No soil samples were collected from the soil borings for chemical analyses. Well construction was performed in accordance with applicable guidelines of the RWQCB and the State of California Department of Health Services. All augers and downhole equipment used during the drilling were decontaminated by steam cleaning prior to drilling. All wastes generated during the drilling were collected in DOT approved 55-gallon drums for handling with other wastes.

3.3. Planned Activities for Next Quarter

During the third quarter of 1999 EKI plans to have the on-site waste from the clarifier excavation and previous soil and groundwater investigations transported to an off-site disposal facility. EKI also plans to begin operation of a soil vapor extraction ("SVE") system during the third quarter of 1999. A discussion of progress on these activities will be included in the next quarterly report.

4. SUMMARY

Gauging of the groundwater table elevation was performed at the groundwater monitoring wells at the Site on 1 June 1999. Quarterly groundwater sampling was performed at the groundwater monitoring wells at the Site on 1 June 1999. The direction of groundwater flow was estimated to be toward the south under both the Webb and Reliable Steel properties. This is consistent with previous groundwater monitoring at the Site.

Chemical analyses of groundwater samples collected during this monitoring event detected PCE, c-1,2-DCE, t-1,2-DCE, 1,1-DCA, 1,2-DCA, and 1,1-DCE. The detected concentrations of TCE were generally higher than the concentrations of the other VOCs detected in each sample. The results of these analyses are generally consistent with prior sampling and analysis of groundwater collected at the Site. The highest concentration of TCE was detected in the sample of groundwater collected from well MW-1 (28,000 ug/l) near the building on the Webb property. TCE was detected at 0.90 ug/l in the groundwater sample collected from well MW-4 located downgradient of the Reliable Steel property.

Cornerstone removed the clarifier at the Site between 1 and 3 June 1999. The excavated area was filled with 47 cubic yards of non-native sand. The excavated soil will be disposed off-site during the next quarter of 1999.

On 23 and 24 June 1999, West HazMat Drilling Corporation ("West HazMat") installed eight vapor wells at the Site. West Hazmat installed two vapor extraction wells (SVE-1 and SVE-D1), two vapor monitoring wells (SVE-2 and SVE-3), and four vapor monitoring probes (VMP-1, VMP-2, VMP-D1, and VMP-D2) at the Site. EKI plans to install and begin operation of an SVE remediation system during the next quarter of 1999 using these vapor wells.

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for April to June 1999

Jervis B. Webb Company, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-1	2/27/98	106.09	44.79	61.30	
	3/2/98	106.09	44.82	61.27	
	3/4/98	106.09	44.58	61.51	
	4/8/98	106.09	44.57	61.52	
	5/20/98	106.09	43.99	62.10	
	10/8/98	106.09	43.38	62.71	
	11/5/98	106.09	43.14	62.95	
	12/21/98	106.09	43.37	62.72	
	1/19/99	106.09	43.26	62.83	
	2/3/99	106.09	42.98	63.11	
	3/30/99	106.09	43.22	62.87	
	6/1/99	106.09	43.48	62.61	
MW-2	2/27/98	106.65	44.02	62.63	Truck parked on well.
	3/2/98	106.65	44.06	62.59	
	3/4/98	106.65	44.13	62.52	
	4/8/98	106.65	NR	--	
	5/20/98	106.65	43.51	63.14	
	10/8/98	106.65	42.84	63.81	
	11/5/98	106.65	42.64	64.01	
	12/21/98	106.65	42.69	63.96	
	1/19/99	106.65	42.66	63.99	
	2/3/99	106.65	42.55	64.10	
	3/30/99	106.65	42.63	64.02	
	6/1/99	106.65	42.91	63.74	
MW-3	2/27/98	105.87	44.55	61.32	
	3/2/98	105.87	44.56	61.31	
	3/4/98	105.87	44.40	61.47	
	4/8/98	105.87	44.39	61.48	
	5/20/98	105.87	43.80	62.07	
	10/8/98	105.87	43.26	62.61	
	11/5/98	105.87	43.60	62.27	
	12/21/98	105.87	43.33	62.54	
	1/19/99	105.87	43.18	62.69	
	2/3/99	105.87	42.97	62.90	
	3/30/99	105.87	43.19	62.68	
	6/1/99	105.87	43.58	62.29	

TABLE 1

Groundwater Elevations in Monitoring Wells

Quarterly Progress Report for April to June 1999

Jervis B. Webb Company, 5030 Firestone Boulevard, South Gate, California

Well ID	Date	Elevation of Top-of-Casing (ft msl)	Depth to Water (ft bgs)	Elevation of Water Surface (ft msl)	Comments
MW-4	11/3/98	104.72	42.77	61.95	Well Developed
	11/5/98	104.72	42.64	62.08	
	12/21/98	104.72	42.93	61.79	
	1/19/99	104.72	42.80	61.92	
	2/3/99	104.72	42.63	62.09	
	3/30/99	104.72	42.89	61.83	
	6/1/99	104.72	43.28	61.44	
MW-5	11/3/98	106.13	43.32	62.81	Well Developed
	11/5/98	106.13	43.30	62.83	
	12/21/98	106.13	43.58	62.55	
	1/19/99	106.13	43.46	62.67	
	2/3/99	106.13	43.20	62.93	
	3/30/99	106.13	43.49	62.64	
	6/1/99	106.13	43.88	62.25	

NOTES:

Abbreviations:

ft msl = feet above mean sea level

ft bgs = feet beneath ground surface

NR = Not Recorded

-- Not Applicable

1. Monitoring well northing and easting coordinates and top-of-casing elevations for wells MW-1, MW-2, and MW-3 were surveyed on 6 March 1998 by Rattray & Associates, Inc.
2. Monitoring well northing and easting coordinates and top-of-casing elevations for wells MW-4 and MW-5 were surveyed on 21 December 1998 by Rattray & Associates, Inc.

TABLE 2

Analytical Results for Monitoring Well Groundwater Samples

Quarterly Progress Report for April to June 1999

Jervis B. Webb Company, 5030 Firestone Boulevard, South Gate, California

Well ID	Sample Number	Sample Date	Analyte Concentration										
			Benzene (ug/l)	Toluene (ug/l)	Xylenes (ug/l)	1,1-DCA (ug/l)	1,1-DCE (ug/l)	1,2-DCA (ug/l)	c-1,2-DCE (ug/l)	t-1,2-DCE (ug/l)	PCE (ug/l)	TCE (ug/l)	TDS (mg/l)
MW-1	MW-1-0304	3/4/98	<100	<100	<100	<100	220	<100	130	<100	140	24,000	--
	MW-1-0304DUP	3/4/98	<100	<100	<100	<100	210	<100	150	<100	160	25,000	--
	MW-1-0520	5/20/98	<125	<125	<125	<125	160	<125	130	<125	<125	24,000	1,500
	MW-1	11/5/98	<125	<125	<125	<125	140	<125	160	<125	170	28,000	--
	MW-1	2/3/99	<125	<125	<125	<125	130	<125	160	<125	160	27,000	--
	MW-1	6/1/99	<100	<100	<100	<100	140	<100	190	<100	160	28,000	--
MW-2	MW-2-0304	3/4/98	<10	<10	<10	13	34	<10	65	<10	<10	2,700	--
	MW-2-0520	5/20/98	<10	<10	<10	14	38	<10	68	<10	<10	3,000	2,500
	MW-2	11/5/98	<10	<10	<10	13	36	<10	68	<10	<10	3,200	--
	MW-2	2/3/99	<10	<10	<10	13	36	<10	70	<10	<10	3,200	--
	MW-2	6/1/99	<10	<10	<10	12	34	<10	68	<10	<10	2,800	--
MW-3	MW-3-0304	3/4/98	<10	13	<10	14	82	<10	200	<10	<10	2,800	--
	MW-3-0520	5/20/98	<10	<10	<10	13	58	<10	230	15	<10	2,800	1,100
	MW-3	11/5/98	<10	<10	<10	11	66	<10	240	18	<10	2,300	--
	MW-3	2/3/99	<10	<10	<10	11	64	<10	220	18	<10	2,000	--
	MW-3	6/1/99	<10	<10	<10	11	66	53	240	18	<10	1,900	--
MW-4	MW-4	11/5/98	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.67	<0.5	<0.5	6.7	--
	MW-4	2/3/99	<0.5	<0.5	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	--
	MW-4	6/1/99	<0.5	<0.5	<0.5	<0.5	<0.5	65	1.1	<0.5	<0.5	0.90	--
MW-5	MW-5	11/5/98	<25	<25	<25	<25	42	<25	380	30	<25	5,000	--
	MW-5-DUP	11/5/98	<25	<25	<25	<25	40	<25	360	29	<25	4,800	--
	MW-5	2/3/99	<25	<25	<25	<25	49	<25	420	35	<25	5,100	--
	MW-5-DUP	2/3/99	<25	<25	<25	<25	45	<25	370	31	<25	4,500	--
	MW-5	6/1/99	<25	<25	<25	<25	52	35	420	36	<25	5,500	--
	MW-5-DUP	6/1/99	<25	<25	<25	<25	56	39	430	35	<25	5,300	--

TABLE 2

Analytical Results for Monitoring Well Groundwater Samples

Quarterly Progress Report for April to June 1999

Jervis B. Webb Company, 5030 Firestone Boulevard, South Gate, California

NOTES:

1,1-DCA = 1,1-dichloroethane

1,1-DCE = 1,1-dichloroethene

1,2-DCA = 1,2-dichloroethane

c-1,2-DCE = cis-1,2-dichloroethene

t-1,2-DCE = trans-1,2-dichloroethene

PCE = tetrachloroethene

TCE = trichloroethene

TDS = total dissolved solids

VOCs = volatile organic compounds

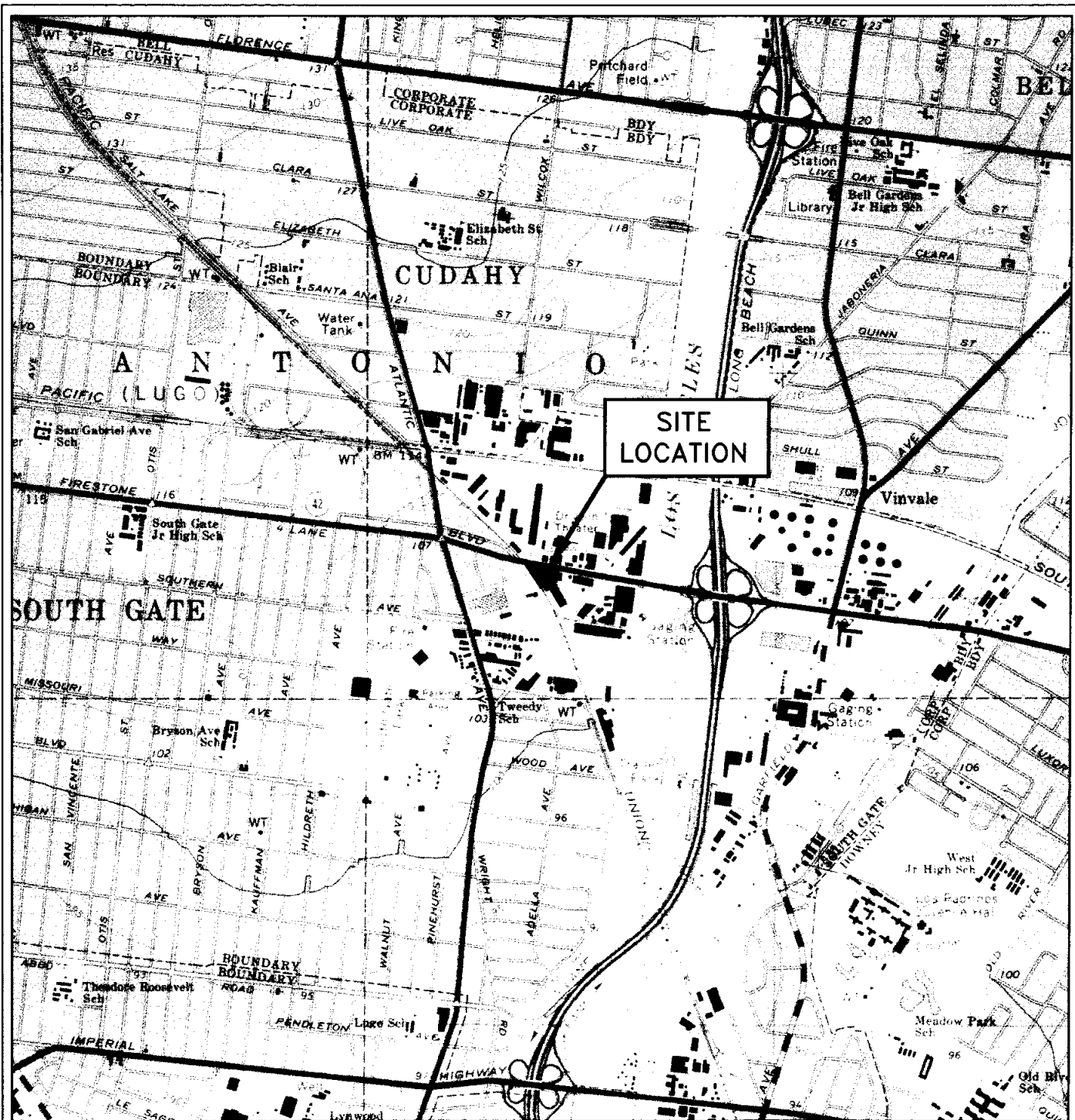
Xylenes = total Xylene isomers

mg/l = milligrams per liter

ug/l = micrograms per liter

-- indicates not analyzed

1. Analyses performed by Orange Coast Analytical, Inc. using EPA Method 8260 for VOCs and EPA Method 160.1 for TDS.
1. < indicates that the analyte was not detected at a concentration above the indicated method detection limit.



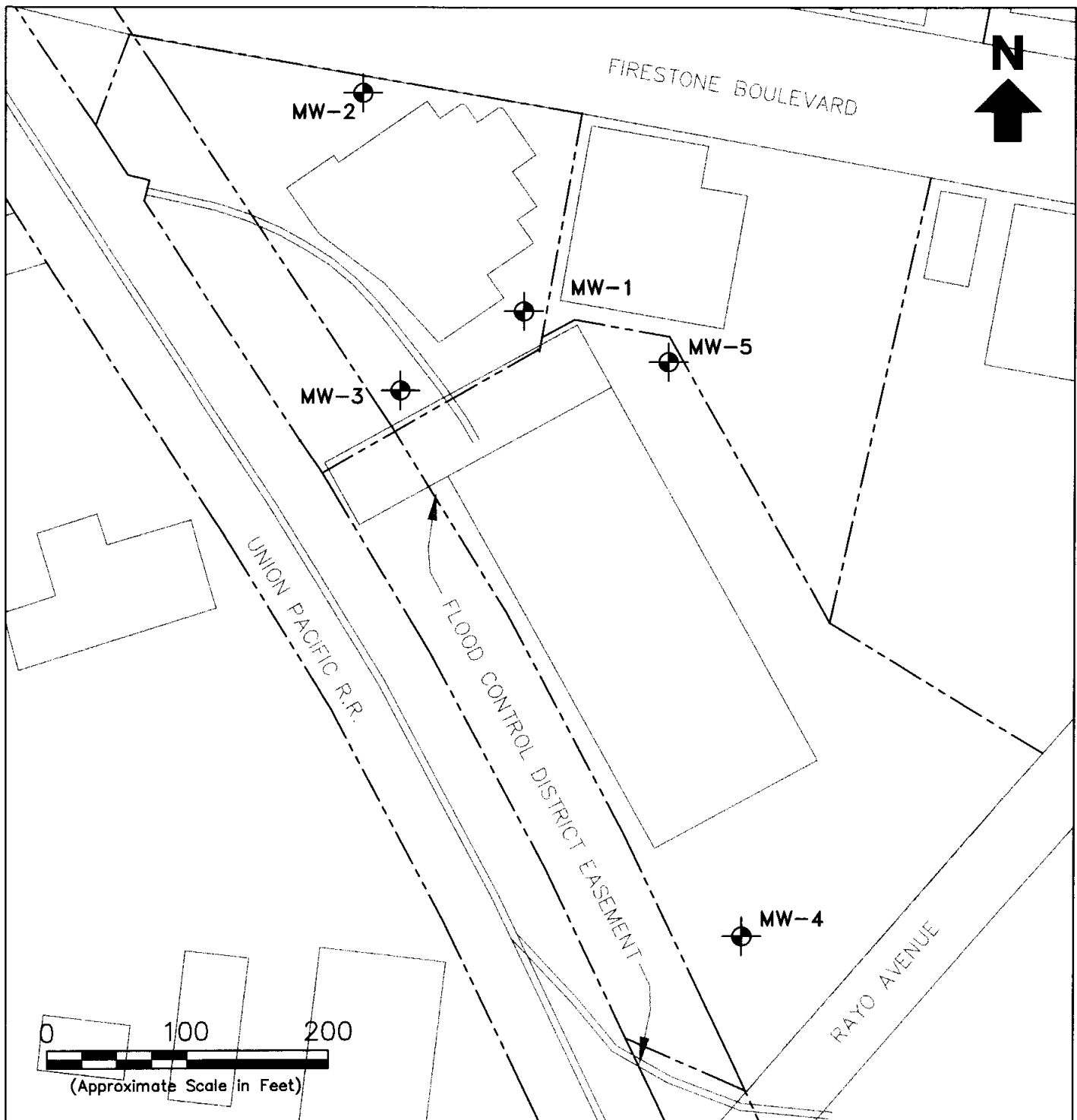
0 2,000 4,000
 (Approximate Scale in Feet)

Source: U.S.G.S 7.5 Minute Series "South Gate"
 Quadrangle, 1964, photorevised 1981.


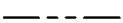
**Erler &
 Kalinowski, Inc.**

Site Location Map

Jervis B. Webb Company
 South Gate, California
 July 1999
 EKI 961025.04
 Figure 1



LEGEND

-  Groundwater Monitoring Well
-  Property Line/Boundary

**Erler &
Kallnowski, Inc.**

Monitoring Well Locations

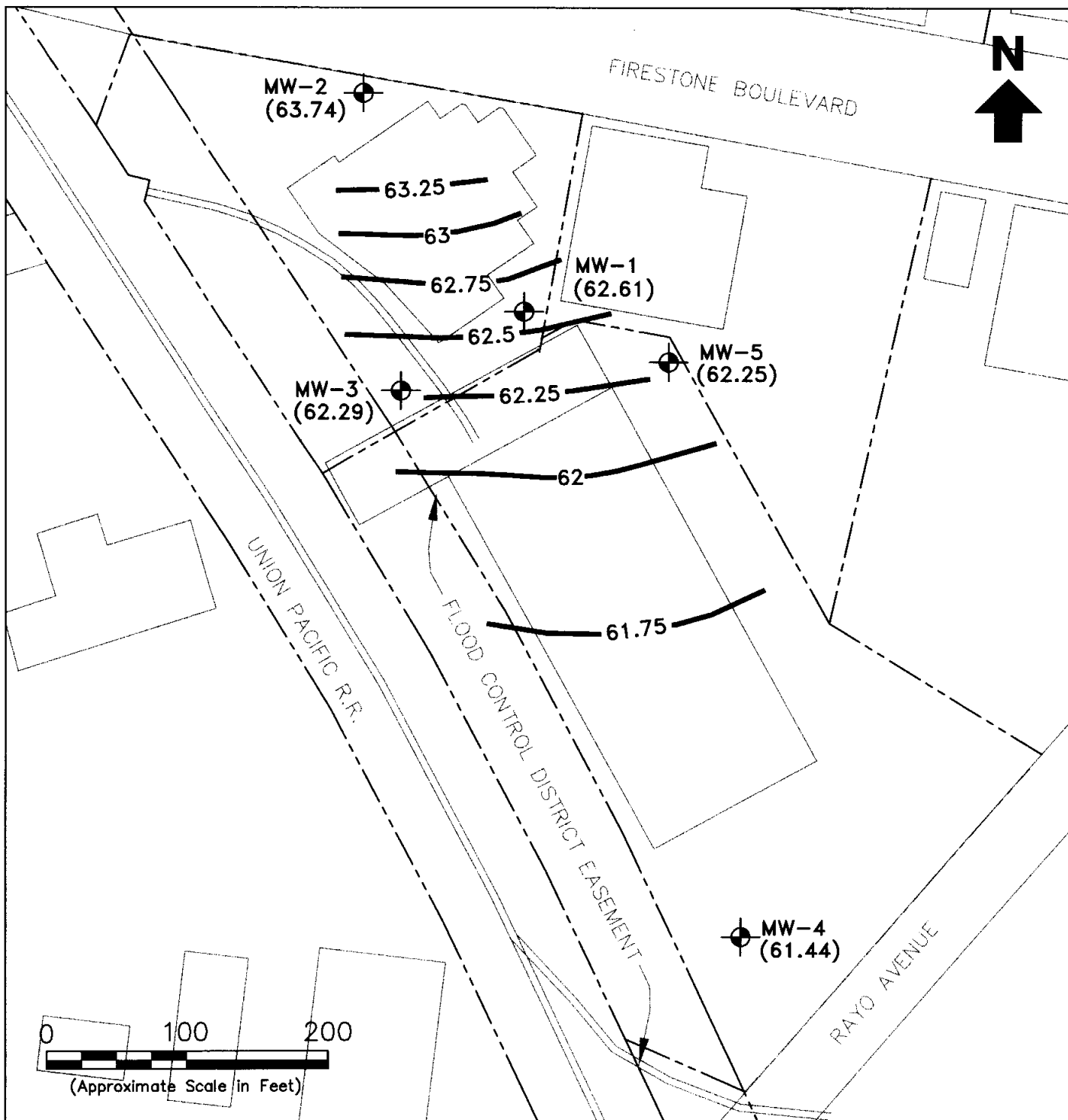
Jervis B. Webb Company
South Gate, California

July 1999
EKI 961025.04




Notes:

1. All locations are approximate.

Figure 2



LEGEND

-  Contour Representing the Elevation of the Groundwater Table in Feet Above Mean Sea Level (msl)
-  MW-3 (62.61) Groundwater Monitoring Well with Groundwater Elevation (msl)
-  Property Line/Boundary

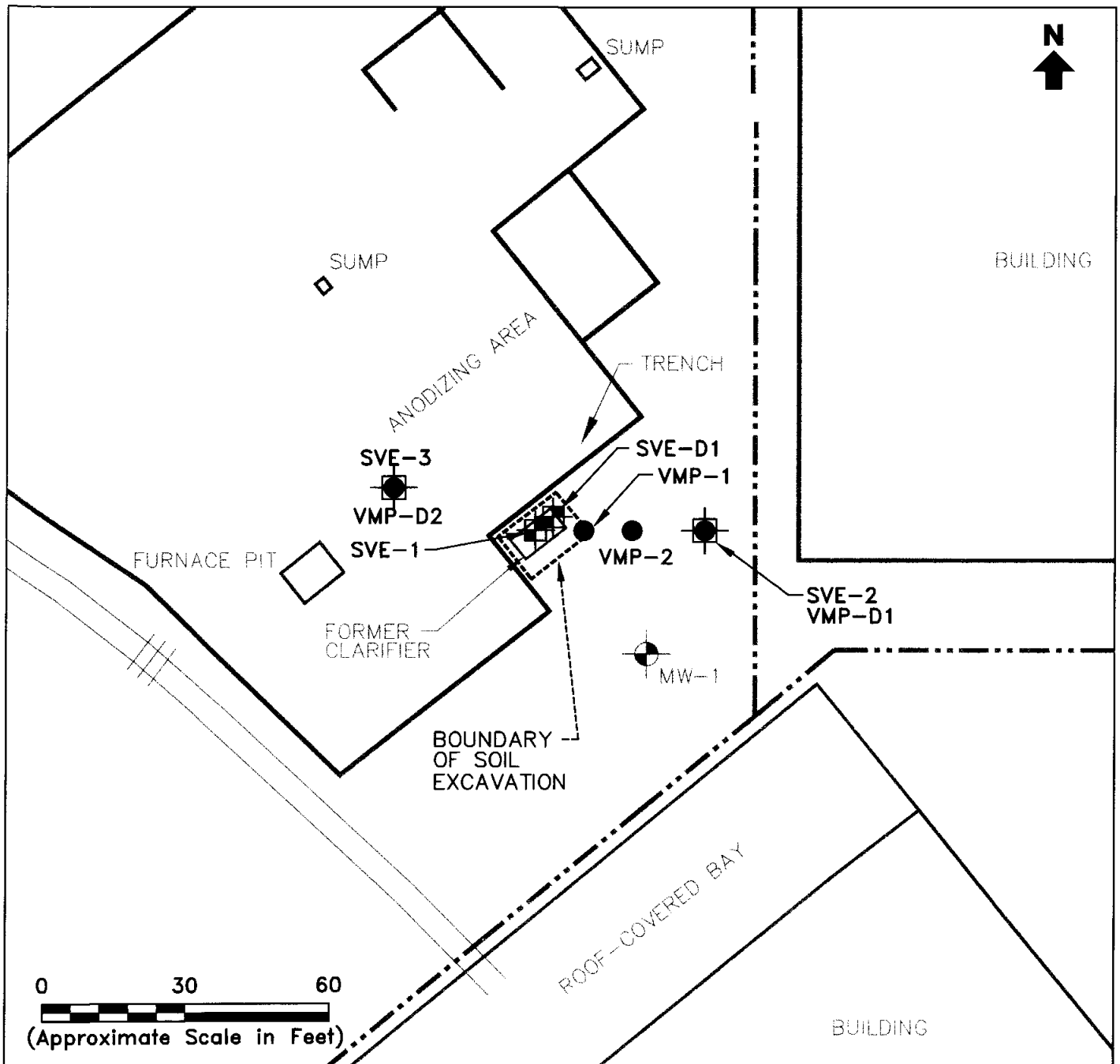
Notes:

1. All locations are approximate.

Erler & Kalinowski, Inc.

Elevation of the Groundwater Table on 1 June 1999

Jervis B. Webb Company
 South Gate, California
 July 1999
 EKI 961025.04
Figure 3



LEGEND

- LOCATION OF NESTED SOIL VAPOR EXTRACTION AND VACUUM MONITORING WELL
- LOCATION OF SOIL VAPOR EXTRACTION WELL
- LOCATION OF VACCUM MONITORING POINT
- LOCATION OF GROUNDWATER MONITORING WELL
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

1. All locations are approximate.

**Erler &
Kalinowski, Inc.**
Vapor Well and Clarifier
Excavation Locations

Jervis B. Webb Company
South Gate, CA
July 1999
EKI 961025.04

Figure 4

APPENDIX A

Groundwater Purge and Water Quality Monitoring Forms for Groundwater Sampling

GROUNDWATER PURGE AND
WATER QUALITY MONITORING FORM

Erler &
Kalinowski, Inc.

PROJECT NAME: WEBB		DATE: 6/1/99	
PROJECT NUMBER: 961025.02		WELL NUMBER: MW-1	PERSONNEL: REH
WELL VOLUME CALCULATION:			
Depth of Well (ft.)	Depth to Water (ft.)	Water Column (ft.)	Multiplier (below)
70	43.48'	= 26.32'	* 0.64 =
Mult. for casing diam. = 2-in.=0.16; 4-in.=0.64; 5-in.=1.02; 6-in.=1.44 gals/ft.			

No. of bailers prior to start of purge: 0 PURGE METHOD: 2" SYMENSIBLE PUMP PURGE DEPTH: START TIME: 14:26 END TIME: TOTAL GALLONS PURGED:	INSTRUMENT CALIBRATION	
	<u>Instrument</u>	<u>Field measure</u>
	<u>Standard measure</u>	
	Conductivity	SEE LOG FORM
	pH	WELL MW-4
	pH	
	Turbidity	
	Temperature	
	Depth Probe	

Time	14:34	14:52	14:57					
Volume Purged (gallons)	20	40	50					
Temperature (degrees F or C)	72.9	69.7	69.1					
pH (units)	7.63	7.94	7.48					
Specific Conductivity (uS/cm)	1.58	2.30	2.77					
Turbidity/Color (NTU)	20.9	4.85	3.68					
Odor								
Depth to Water (ft below TOC) during purge								
Number of Casing Volumes removed								
Purge Rate (gallons/minute)								

COMMENTS/	Field I.D.	Time Collected	Containers & Preservation	Analyses Requested
SAMPLES:	MW-1	15:05	2 x VOA w/Hcl	8260
	MW-1			
GENERATOR OUT OF GAS 14:40 - SHUT-DOWN				
REFILL AND START-UP 14:52				

GROUNDWATER PURGE AND
WATER QUALITY MONITORING FORM

Erler &
Kalinowski, Inc.

PROJECT NAME: WEBB DATE: 6/1/99
PROJECT NUMBER: 961025.02 WELL NUMBER: MW-2 PERSONNEL: ACH

WELL VOLUME CALCULATION:

Depth of Well (ft.)	Depth to Water (ft.)	Water Column (ft.)	Multiplier (below)	Casing Vol. (gallons)
<u>70</u>	<u>42.91'</u>	<u>= 27.09'</u>	<u>* 0.64</u>	<u>=</u>

Mult. for casing diam. = 2-in.=0.16; 4-in.=0.64; 5-in.=1.02; 6-in.=1.44 gals/ft.

No. of bailers prior to start of purge: 0

PURGE METHOD: 2" SUBMERSIBLE PUMP

PURGE DEPTH:

START TIME: 10:32

END TIME:

TOTAL GALLONS PURGED:

INSTRUMENT CALIBRATION

Instrument	Field measure	Standard measure
Conductivity	<u>SEE LOG FORM</u>	
pH	<u>WELL MW-4</u>	
pH		
Turbidity		
Temperature		
Depth Probe		

Time	10:42	10:50	10:58	11:08				
Volume Purged (gallons)	30	40	50	55				
Temperature (degrees F or C)	71.9	71.7	70.8					
pH (units)	7.34	7.47	7.52					
Specific Conductivity (uS/cm)	3.91	3.26	3.37					
Turbidity/Color (NTU)		130	39	4.7				
Odor								
Depth to Water (ft below TOC) during purge								
Number of Casing Volumes removed								
Purge Rate (gallons/minute)								

COMMENTS/ Field I.D. Time Collected Containers & Preservation Analyses Requested

SAMPLES:	<u>MW-2</u>	<u>11:05</u>	<u>2 x VOA w/HCl</u>	<u>8260</u>
	<u>MW-2</u>	<u>11:05</u>	<u>2 x VOA w/HCl</u>	<u>8260</u>

GROUNDWATER PURGE AND
WATER QUALITY MONITORING FORM

Erler &
Kalinowski, Inc.

PROJECT NAME: WEBB DATE: 6/1/99
PROJECT NUMBER: 961025.02 WELL NUMBER: MW-3 PERSONNEL: KEH

WELL VOLUME CALCULATION:

Depth of Well (ft.)	Depth to Water (ft.)	Water Column (ft.)	Multiplier (below)	Casing Vol (gallons)
70	43.58'	= 26.42'	* 0.64	=

Mult. for casing diam. = 2-in.=0.16; 4-in.=0.64; 5-in.=1.02; 6-in.=1.44 gals/ft.

No. of bailers prior to start of purge: 0

PURGE METHOD: 2" SUBMERSIBLE PUMP

PURGE DEPTH:

START TIME: 11:35

END TIME: 12:20

TOTAL GALLONS PURGED:

INSTRUMENT CALIBRATION

Instrument	Field measure	Standard measure
Conductivity	<u>SEE LOG FORM</u> <u>WELL MW-4</u>	
pH		
pH		
Turbidity		
Temperature		
Depth Probe		

Time								
	<u>11:50</u>	<u>12:00</u>	<u>12:20</u>					
Volume Purged (gallons)	<u>40</u>	<u>50</u>	<u>55</u>					
Temperature (degrees F or C)	<u>72.7</u>	<u>72.7</u>	<u>72.5</u>					
pH (units)	<u>7.65</u>	<u>7.63</u>	<u>7.63</u>					
Specific Conductivity (uS/cm)	<u>1.80</u>	<u>2.16</u>	<u>2.36</u>					
Turbidity/Color (NTU)	<u>4.69</u>	<u>2.44</u>	<u>0.70</u>					
Ocor								
Depth to Water (ft below TOC) during purge								
Number of Casing Volumes removed								
Purge Rate (gallons/minute)								

COMMENTS/ Field I.D. Time Collected Containers & Preservation Analyses Requested

SAMPLES: MW-3 12:30 2 x VOA w/Hcl 8260
MW-3 12:30 2 x VOA w/Hcl 8260

GROUNDWATER PURGE AND
WATER QUALITY MONITORING FORM

Erler &
Kalinowski, Inc.

PROJECT NAME: WEBB DATE: 6/1/99
PROJECT NUMBER: 901025.02 WELL NUMBER: MW-4 PERSONNEL: ReH

WELL VOLUME CALCULATION:

Depth of Well (ft.)	Depth to Water (ft.)	Water Column (ft.)	Multiplier (below)	Casing Vol. (gallons)
<u>70'</u>	<u>43.28'</u>	<u>= 26.72'</u>	<u>* 0.64</u>	<u>=</u>

Mult. for casing diam. = 2-in.=0.16; 4-in.=0.64; 5-in.=1.02; 6-in.=1.44 gals/ft.

No. of bailers prior to start of purge: 0

PURGE METHOD: 2" SUBMERSIBLE PUMP

PURGE DEPTH: 45'

START TIME: 9:14

END TIME: 9:43

TOTAL GALLONS PURGED: 55

INSTRUMENT CALIBRATION

Instrument	Field measure	Standard measure
Conductivity	<u>0.98</u>	<u>1.00</u>
pH	<u>4.03</u>	<u>4.01</u>
pH	<u>6.98</u>	<u>7.00</u>
Turbidity	<u>0.21</u>	<u>0.20</u>
Temperature	<u>63.2</u>	<u>-</u>
Depth Probe		

Time	9:21	9:28	9:40					
Volume Purged (gallons)	<u>15</u>	<u>25</u>	<u>50</u>					
Temperature (degrees F or C)	<u>70.3</u>	<u>68.9</u>	<u>69</u>					
pH (units)	<u>6.30</u>	<u>6.71</u>	<u>7.04</u>					
Specific Conductivity (uS/cm)	<u>3.94</u>	<u>3.79</u>	<u>3.83</u>					
Turbidity/Color (NTU)	<u>102.0</u>	<u>10.8</u>	<u>3.75</u>					
Odor								
Depth to Water (ft below TOC) during purge								
Number of Casing Volumes removed								
Purge Rate (gallons/minute)								

COMMENTS/ Field I.D. Time Collected Containers & Preservation Analyses Requested

SAMPLES: MW-4 9:50 2 x VOA w/ HCl 8260
MW-4 9:50 2 x VOA w/ HCl 8260

001724

GROUNDWATER PURGE AND
WATER QUALITY MONITORING FORM

Erler &
Kalinowski, Inc.

PROJECT NAME: WEBB DATE: 6/1/99
PROJECT NUMBER: 961025.02 WELL NUMBER: MW-5 PERSONNEL: RCH
WELL VOLUME CALCULATION:
Depth of Well (ft.) 70 - Depth to Water (ft.) 43.88 = Water Column (ft.) 26.12 * Multiplier (below) 0.64 = Casing Vol. (gallons)
Mult. for casing diam. = 2-in.=0.16; 4-in.=0.64; 5-in.=1.02; 6-in.=1.44 gals/ft.

No. of bailers prior to start of purge: 0

PURGE METHOD: 2" SUBMERSIBLE PUMP

PURGE DEPTH:

START TIME: 13:04

END TIME:

TOTAL GALLONS PURGED:

INSTRUMENT CALIBRATION

Instrument	Field measure	Standard measure
Conductivity	<u>SEE LOG FORM</u> <u>WELL MW-4</u>	
pH		
pH		
Turbidity		
Temperature		
Depth Probe		

Time	<u>13:20</u>	<u>13:33</u>	<u>13:43</u>					
Volume Purged (gallons)	<u>25</u>	<u>40</u>	<u>55</u>					
Temperature (degrees F or C)	<u>70.4</u>	<u>69.4</u>	<u>70.1</u>					
pH (units)	<u>7.49</u>	<u>7.35</u>	<u>7.32</u>					
Specific Conductivity (uS/cm)	<u>3.66</u>	<u>3.88</u>	<u>3.91</u>					
Turbidity/Color (NTU)	<u>2.53</u>							
Odor								
Depth to Water (ft below TOC) during purge								
Number of Casing Volumes removed								
Purge Rate (gallons/minute)								

COMMENTS/	Field I.D.	Time Collected	Containers & Preservation	Analyses Requested
SAMPLES:	<u>MW-5</u>	<u>13:50</u>	<u>2 x VOA w/Hcl</u>	<u>8260</u>
	<u>MW-5</u>	<u>13:50</u>	<u>2 x VOA w/Hcl</u>	<u>8260</u>
	<u>MW-5-DUP</u>	<u>13:55</u>	<u>2 x VOA w/Hcl</u>	<u>8260</u>
	<u>MW-5-DUP</u>	<u>13:58</u>	<u>2 x VOA w/Hcl</u>	<u>8260</u>

APPENDIX B

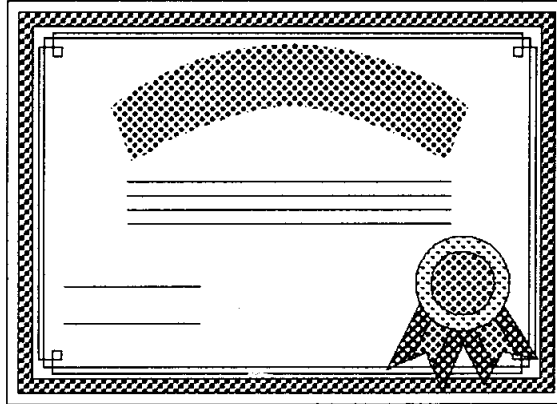
Laboratory Reports and Chain-of-Custody Forms for Groundwater Sampling



ORANGE COAST ANALYTICAL, INC.

3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067

4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970



ORANGE COAST ANALYTICAL THANKS YOU FOR YOUR BUSINESS

THE FOLLOWING PAGES ARE THE ANALYSIS REPORT

ON THE SAMPLES YOU REQUESTED.

IF YOU HAVE ANY QUESTIONS REGARDING THIS REPORT

PLEASE FEEL FREE TO CONTACT US.

ERLER & KALINOWSKI, INC.
ORIGINAL INVOICE
OK TO PAY YES ☐ NO ☐
JOB NO: _____
DATE: _____
SIGNATURE: _____
NOTE: _____

RECEIVED

JUN 17 1999

ERLER & KALINOWSKI, INC.
SANTA MONICA OFFICE



ORANGE COAST ANALYTICAL, INC.

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification

(ELAP) No.: 1416

Expiration Date: 2001

Laboratory Director's Name (Print) : Mark Noorani

Client: Erler & Kalinowski, Inc.

Project No.: 961025.02

Project Name: Webb

Laboratory Reference: EKI 10913

Analytical Method: EPA 8260

Date Sampled: 06/01/99

Date Received: 06/02/99

Date Reported: 06/04/99

Sample Matrix: Water

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

**ORANGE COAST ANALYTICAL, INC.**

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 4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

ANALYTICAL TEST RESULTS 8260**Reporting Unit: ug/l**

DATE ANALYZED		06/03/99	06/03/99	06/03/99	06/03/99
DILUTION FACTOR		1	1	20	20
LAB SAMPLE I.D.			99060001	99060002	99060003
CLIENT SAMPLE I.D.			MW-4	MW-2	MW-3
COMPOUND	MDL	MB			
Acetone	2.0	<2.0	<2.0	<40	<40
Benzene	0.5	<0.5	<0.5	<10	<10
Bromodichloromethane	0.5	<0.5	<0.5	<10	<10
Bromoform	0.5	<0.5	<0.5	<10	<10
Bromomethane	1.0	<1.0	<1.0	<20	<20
2-Butanone	1.0	<1.0	<1.0	<20	<20
Carbon Disulfide	0.5	<0.5	<0.5	<10	<10
Carbon Tetrachloride	0.5	<0.5	<0.5	<10	<10
Chlorobenzene	0.5	<0.5	<0.5	<10	<10
Chlorodibromomethane	0.5	<0.5	<0.5	<10	<10
Chloroethane	0.5	<0.5	<0.5	<10	<10
2-Chloroethyl vinyl ether	1.0	<1.0	<1.0	<20	<20
Chloroform	0.5	<0.5	<0.5	<10	<10
Chloromethane	0.5	<0.5	<0.5	<10	<10
1,1-Dichloroethane	0.5	<0.5	<0.5	12	11
1,2-Dichloroethane	0.5	<0.5	65	<10	53
1,1-Dichloroethene	0.5	<0.5	<0.5	34	66
cis 1,2-Dichloroethene	0.5	<0.5	1.1	68	240
Trans 1,2-Dichloroethene	0.5	<0.5	<0.5	<10	18
1,2-Dichloropropane	0.5	<0.5	<0.5	<10	<10
cis-1,3-Dichloropropene	0.5	<0.5	<0.5	<10	<10
trans-1,3-Dichloropropene	0.5	<0.5	<0.5	<10	<10
Ethylbenzene	0.5	<0.5	<0.5	<10	<10
2-Hexanone	1.0	<1.0	<1.0	<20	<20
Methylene chloride	2.5	<2.5	<2.5	<50	<50
4-Methyl-2-pentanone	1.0	<1.0	<1.0	<20	<20
Styrene	0.5	<0.5	<0.5	<10	<10
1,1,2,2-Tetrachloroethane	0.5	<0.5	<0.5	<10	<10
Tetrachloroethene	0.5	<0.5	<0.5	<10	<10
Toluene	0.5	<0.5	<0.5	<10	<10
1,1,1-Trichloroethane	0.5	<0.5	<0.5	<10	<10
1,1,2-Trichloroethane	0.5	<0.5	<0.5	<10	<10
Trichloroethene	0.5	<0.5	0.90	2800	1900
Trichlorofluoromethane	0.5	<0.5	<0.5	<10	<10
Vinyl acetate	1.0	<1.0	<1.0	<20	<20
Vinyl Chloride	0.5	<0.5	<0.5	<10	<10
Total Xylenes	0.5	<0.5	<0.5	<10	<10

SURROGATE	SPK	ACP%	MB			
RECOVERY	CONC		%RC			
Dibromofluoromethane	50	86-118	91	90	89	87
Toluene-d8	50	88-110	94	93	95	94
4-Bromofluorobenzene	50	86-115	96	96	96	96

**ORANGE COAST ANALYTICAL, INC.**

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 4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

ANALYTICAL TEST RESULTS 8260**Reporting Unit: ug/l**

DATE ANALYZED		06/03/99	06/03/99	06/03/99	06/03/99
DILUTION FACTOR		1	50	50	200
LAB SAMPLE I.D.			99060004	99060005	99060006
CLIENT SAMPLE I.D.			MW-5	MW-5-DUP	MW-1
COMPOUND	MDL	MB			
Acetone	2.0	<2.0	<100	<100	<400
Benzene	0.5	<0.5	<25	<25	<100
Bromodichloromethane	0.5	<0.5	<25	<25	<100
Bromoform	0.5	<0.5	<25	<25	<100
Bromomethane	1.0	<1.0	<50	<50	<200
2-Butanone	1.0	<1.0	<50	<50	<200
Carbon Disulfide	0.5	<0.5	<25	<25	<100
Carbon Tetrachloride	0.5	<0.5	<25	<25	<100
Chlorobenzene	0.5	<0.5	<25	<25	<100
Chlorodibromomethane	0.5	<0.5	<25	<25	<100
Chloroethane	0.5	<0.5	<25	<25	<100
2-Chloroethyl vinyl ether	1.0	<1.0	<50	<50	<100
Chloroform	0.5	<0.5	<25	<25	<100
Chloromethane	0.5	<0.5	<25	<25	<100
1,1-Dichloroethane	0.5	<0.5	<25	<25	<100
1,2-Dichloroethane	0.5	<0.5	35	39	<100
1,1-Dichloroethene	0.5	<0.5	52	56	140
cis 1,2-Dichloroethene	0.5	<0.5	420	430	190
Trans 1,2-Dichloroethene	0.5	<0.5	36	35	<100
1,2-Dichloropropane	0.5	<0.5	<25	<25	<100
cis-1,3-Dichloropropene	0.5	<0.5	<25	<25	<100
trans-1,3-Dichloropropene	0.5	<0.5	<25	<25	<100
Ethylbenzene	0.5	<0.5	<25	<25	<100
2-Hexanone	1.0	<1.0	<50	<50	<200
Methylene chloride	2.5	<2.5	<125	<125	<500
4-Methyl-2-pentanone	1.0	<1.0	<50	<50	<200
Styrene	0.5	<0.5	<25	<25	<100
1,1,2,2-Tetrachloroethane	0.5	<0.5	<25	<25	<100
Tetrachloroethene	0.5	<0.5	<25	<25	160
Toluene	0.5	<0.5	<25	<25	<100
1,1,1-Trichloroethane	0.5	<0.5	<25	<25	<100
1,1,2-Trichloroethane	0.5	<0.5	<25	<25	<100
Trichloroethene	0.5	<0.5	5,500	5,300	28,000
Trichlorofluoromethane	0.5	<0.5	<25	<25	<100
Vinyl acetate	1.0	<1.0	<50	<50	<200
Vinyl Chloride	0.5	<0.5	<25	<25	<100
Total Xylenes	0.5	<0.5	<25	<25	<100

SURROGATE	SPK	ACP%	MB			
RECOVERY	CONC		%RC			
Dibromofluoromethane	50	86-118	91	86	88	89
Toluene-d8	50	88-110	94	95	95	97
4-Bromofluorobenzene	50	86-115	96	97	96	97

**ORANGE COAST ANALYTICAL, INC.**

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8260 QA / QC REPORT

Reporting Unit : µg/l

1. Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 06/03/99

LAB Sample I. D. : 99060001

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethene	0.0	20	23	22	115	110	4	61-145	14
Benzene	0.0	20	20	21	100	105	5	76-127	11
Trichloroethene	0.90	20	20	21	96	100	5	71-120	14
Toluene	0.0	20	18	19	90	95	5	76-125	13
Chlorobenzene	0.0	20	19	20	95	100	5	75-130	13

R1 = Result of Laboratory Sample I.D.

SPK CONC = Spiking Concentration ($\leq 5 \times \text{PQL}$) ; PQL = Practical Quantitation Limit.

MS = Matrix Spike Result

MSD = Matrix Spike Duplicate Result

%MS = Percent Recovery of MS: $\{(MS-R1)/SP\} \times 100$.

%MSD = Percent Recovery of MSD: $\{(MSD-R1)/SP\} \times 100$.

RPD = Relative Percent Difference: $\{(MS - MSD)/(MS + MSD)\} \times 100 \times 2$

ACP%MS(MSD) = Acceptable Range of Percent.

ACP RPD = Acceptable Relative Percent Difference

2. Laboratory Quality Control check sample

Date Performed : 06/03/99

LAB Sample I. D. : OCA 5649

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dichloroethane	50	45	90	80 -120
Carbon tetrachloride	50	47	94	80 -120
Ethylbenzene	50	44	88	80 -120
Tetrachloroethene	50	49	98	80 -120

ANALYST: Mehran Hasemi

DATE: 06/03/99

ORANGE COAST ANALYTICAL, INC.

4620 E. Elwood, Suite 4
Phoenix, AZ 85040

(602) 736-0960 Fax (602) 736-0970

Page 1 of 1**REQUIRED TAT:**[illegible]

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